ASi Safety 8I/1O Module, 16 / 8 safe inputs and 1 (2) electronic safe outputs, IP20

ASi Safety 8I/1O Module

ASi Safety Module with 16 / 8 safe inputs and 1 (2) electronic safe outputs

- **for floating contacts**
- **for optoelectronic protective devices**
- **for complementary switches (Ident. No ≥17023)**
- **adjustable test pulse width (Ident. No ≥17023)**

1 release circuit (1 x electronic safe output)

- **augmented reliability (Ident. No ≥17023)**

Optimal costs for safe in- and outputs on ASi

Maximum number of safe inputs at 22.5 mm cabinet width

Optimized for service and commissioning

Protection category IP20

Figure	Type	Housing	Inputs Safety, SIL 3, cat. 4	Outputs Safety, SIL 3, cat. 4	Safety signal inputs	Input voltage (sensor supply.)[1]	Output voltage (actuator supply.)[2]	ASi address[3]	Article no.
	IP20, 22,5 mm x 114 mm, 6 x COMBICON, Safety	6 x COMBICON	8 x 2 channels	1 release circuit; 1 x electronic safe output, augmented reliability	floating contacts, optoelectronic protective devices	out of AUX	out of AUX	depending on configuration, optimized for ASIMON360	**BWU2578**

1 I**nput voltage (sensor supply):** inputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, inputs shall not be connected to earth or to external potential.

2 **Output voltage (actuator supply):** outputs are supplied by ASi or by AUX (auxiliary 24 V power). If supplied by ASi, outputs shall not be connected to earth or to external potential

3 **ASi address:** 1 AB Slave (max. 62 AB Slaves/ASi network), 2 AB Slaves (max. 31 modules with 2 AB Slaves), Single Slaves (max. 31 Single Slaves/ASi network), mixed use allowed.
For modules with two slaves the second slave is turned off as long as the first slave is addressed to address "0".
Upon request, slaves are available with specific ASi Slave profiles.

Technical realization:

- If the safety input S3 is not needed, the protection feedback can optionally connected on S3. The transfer occurs as usual on the diagnostic slave of the safety ASi outputs.
- No limitation of cable length at safety inputs (the maximum loop resistance is 150Ω).
- 16 / 8 safe inputs for floating contacts or optoelectronic protective devices.

Diagnosis and commissioning:

- LED displays according to other Safety Slaves or to the Monitor.
- Simple configuration via software ASIMON or selection of ASi Slaves with the help of two rotary switches or addressing.
- Chip card for the simple exchange.
- Fixed Safety Code series for each ASi address. Each module generates by same address programming same code series.

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Article no.	BWU2578
Connection	COMBICON clamp
Length of connector cable	unlimited[1]
ASi	
Profile	safety input slaves: S-0.B.0 (ID1=F) and S-0.B.1 (ID1=F) diagnostic slaves: S-7.A.E (ID1=5) configuration slave: S-7.A.5 (ID1=7)
Address	depending on configuration
Voltage	18 ... 31,6 V
Max. current consumption	200 mA
Max. continuous operating current	125 mA
AUX	
Voltage	20 ... 30 V (PELV)
Max. current consumption	1 A max.
Input	
Number	16 / 8 safe inputs for floating contacts or optoelectronic protective devices switching current 15 mA (T = 100µs), continuously 4 mA at 24 V
Supply voltage	out of AUX
Sensor supply	short-circuit and overload protected per EN 61131
Max. current for sensor supply	0,7 A
OSSD test pulses	0 ... 50 Hz
OSSD test pulse width	0 ... 1 ms
Input level	10 mA, R < 150 Ω
Output	
Number	1 (2) output switching elements (semiconductor) max. contact load: 0,7 A DC-13 at 24 V
Supply voltage	out of AUX
Output	short-circuit and overload protected per EN 61131
Max. output current	0,7 A
Test pulse	when output is switched on minimal distance between 2 test pulses: 250 ms, pulse length up to 1 ms
Display	
LEDs S1 ... Sn (yellow)	state of inputs S1 ... S16
LED PWR (green)	ASi power
LED FAULT/FLT (red)	ASi error LED
LED O1 (yellow)	output 1 has switched
LED AUX (red)	24 V DC AUX
Environment	
Applied standards	IEC 61508:2010 EN 62061:2005/A1:2013 EN ISO 13849-1:2008/AC:2009
Storage temperature	0 °C ... +55 °C
Operating temperature	-25 °C ... +85 °C
Housing	plastic, for DIN-rail mounting
Verschmutzungsgrad	2
Protection class (EN 60529)	IP20
Tolerable loading referring to humidity	according to EN 61131-2
Isolation voltage	≥ 500 V
Weight	160 g
Dimensions (W / H / D in mm)	22,5 /99 / 114,5

[1] loop resistance ≤ 150 Ω

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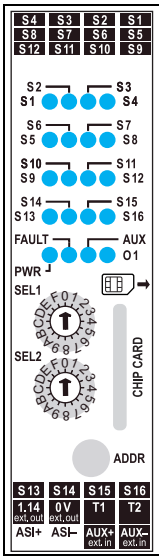
Wiring rules

	Push-in terminals
General	
Nominal cross section	2,5 mm^2
Conductor cross section	
Conductor cross section solid	0,2 ... 2,5 mm^2
Conductor cross section flexible	0,2 ... 2,5 mm^2
Conductor cross section flexible, with ferrule	without plastic sleeve: 0,2 ... 2,5 mm^2
	with plastic sleeve: 0,25 ... 2,5 mm^2
2 conductors with same cross section, stranded, with TWIN ferrules	without plastic sleeve: 0,5 ... 1,5 mm^2
AWG	24 ... 14
Stripped insulation length	10 mm

UL-specifications (UL508) BWU2578	
External protection	An isolated source with a secondary open circuit voltage of ≤30 V_{DC} with a 3 A maximum over current protection. Over current protection is not required when a Class 2 source is employed.
In general	UL mark does not provide UL certification for any functional safety rating or aspects of the above devices.



Clamps	Description
S1, S2, S3, S4	safety input terminal input 1-4
S5, S6, S7, S8	safety input terminal input 5-8
S9, S10, S11, S12	safety input terminal input 9-12
S13, S14, S15, S16	safety input terminal input 13-16
$1.14_{ext.out}$	semiconductor output 1
T1	pulse 1 (S1, S3, S5, S7, S9, S11, S13, S15)
T2	pulse 2 (S2, S4, S6, S8, S10, S12, S14, S16)
0 $V_{ext.out,}$	mass connection for semiconductor output
ASi +, ASi -	connection to the ASi-Bus
ADDR	address socket
AUX $+_{ext.in}$ AUX $-_{ext.in}$	power supply input

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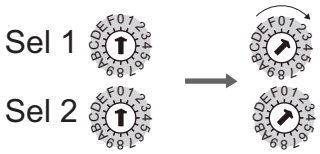
Addressing					
SEL1	**SEL2**	**Description**	**SEL1**	**SEL2**	**Description**
0	**0**	RUN, without configuration slave			
E	**E**	RUN, with configuration slave			
1	**1**	addressing safety input 1, contacts	**5**	**1**	addressing safety input 1, OSSD
2	**2**	addressing safety input 2, contacts	**6**	**2**	addressing safety input 2, OSSD
3	**3**	addressing safety input 3, contacts	**7**	**3**	addressing safety input 3, OSSD
4	**4**	addressing safety input 4, contacts	**8**	**4**	addressing safety input 4, OSSD
5	**5**	addressing safety input 5, contacts	**9**	**5**	addressing safety input 5, OSSD
6	**6**	addressing safety input 6, contacts	**A**	**6**	addressing safety input 6, OSSD
7	**7**	addressing safety input 7, contacts	**B**	**7**	addressing safety input 7, OSSD
8	**8**	addressing safety input 8, contacts	**C**	**8**	addressing safety input 8, OSSD
9	**9**	addressing safety output 1			
A	**A**	addressing safety output 1, diagnostic			
D	**D**	reset to factory defaults			



Diagnostics (device colors)

Value	Color	Description	State change	LED O1
0	green	output on		on
1	green flashing	–		–
2	yellow	restart inhibit	auxiliary signal 2	1 Hz
3	yellow flashing	–		–
4	red	output off		off
5	red flashing	waiting for "reset of error condition" or AUX missing	auxiliary signal 1 or connect AUX	8 Hz
6	gray	internal error, such as "fatal error"	only via "Power ON" on device	all LEDs flashing
7	green/yellow	output released, but not switched on	switching-on by setting of O0	off

Diagnostic slaves

Bit	input	output
Bit0	Diagnostic color	If P1=0 and A0=0, the output is switched off independent from release
Bit1		free
Bit2		free
Bit3	P2=1: response S3 P2=0: response of the release of the state	non existent

Assignment code half sequence - terminals

Code half sequence	Terminals
Bit0	Input terminals: SI 2 / SI 4 / SI 6 / SI8 / SI 10 / SI 12 / SI 14 / SI 16
Bit1	
Bit2	Input terminals: SI 1 / SI 3 / SI 5 / SI 7 / SI9 / S11 / SI 13 / SI 15
Bit3	

Bit	ASi Parameter
Bit P1	
P1=0	Safety output SO_n controlled by safety release and O0=1
P1=1	Safety output SO_n controlled by safety release only

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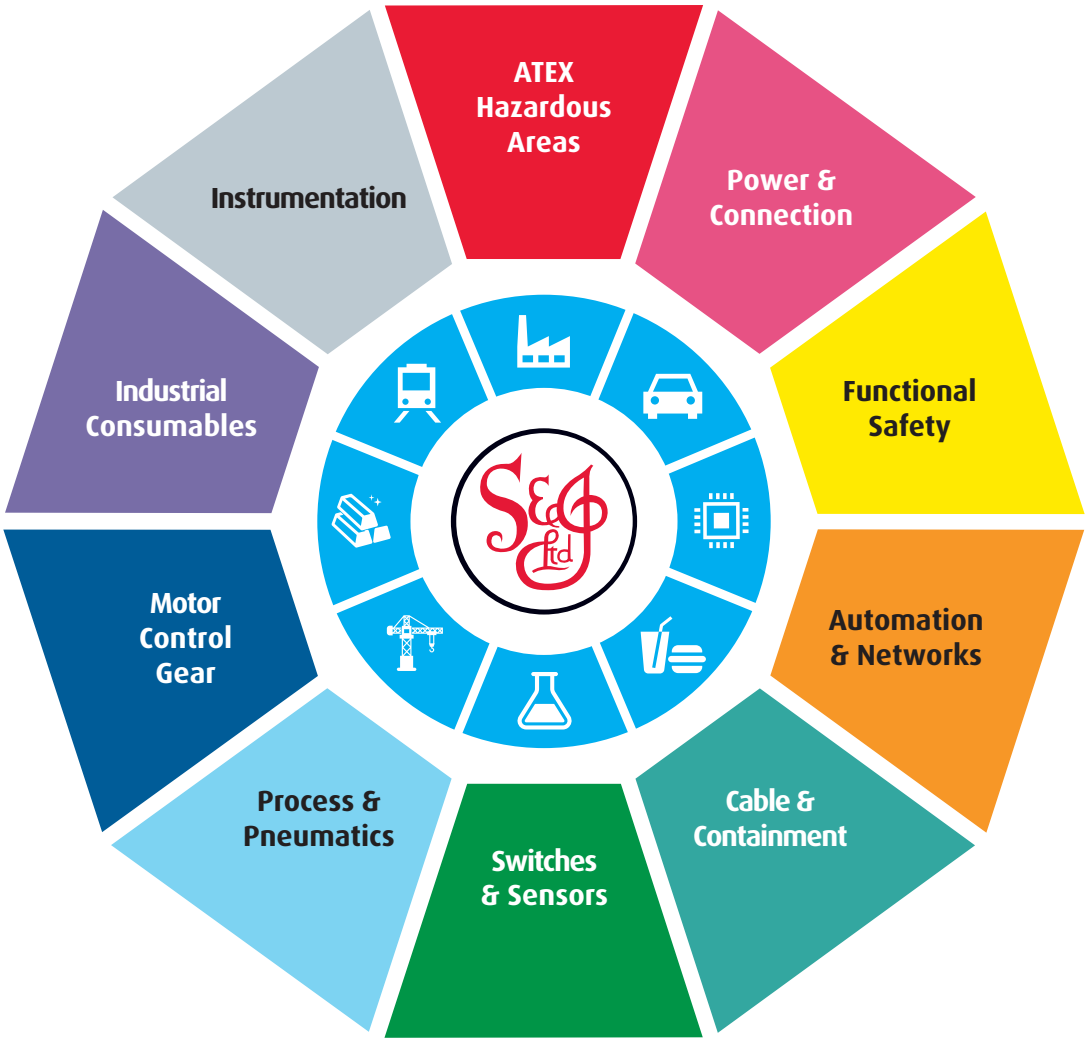

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